functionality as a cleaning body, that is, it does not soften, break down or otherwise become unsuitable for use as a cleaning body at temperatures greater than 120°C, and when exposed to contact with crude oil. Thus, this material has been recited in these claims as being a material which maintains the contact surfaces defined thereon at such temperatures and when exposed to crude oil.

The Examiner agrees that the base reference to Echols does not teach this subject matter. Instead, the Examiner cites a secondary reference, namely, U.S. Patent No. 5,795,402 to Hargett. In short, it is believed that the system of Echols is very different from that of the present invention, since it is drawn to a steam generating power plant, and further the materials used in Echols are not resistant to temperatures in excess of 120°C. Thus, the undersigned agrees that Echols clearly fails to disclose or suggest this feature of the independent claims of the present application. It is also submitted that the teachings of Echols are not compatible with those of the secondary prior art reference, (Hargett) and that Hargett itself fails to disclose the missing subject matter in any event.

Echols defines the subject matter of his invention as "heat exchangers of the type contemplated by the present invention comprise condensers utilized in applications such as steam generating power plants" (col. 1, lines 9-11).

Thus, the cleaning systems of Echols and the tube cleaners are restricted in Echols to water as fluid medium. No other system or tube cleaner is mentioned throughout the disclosure of Echols. Echols describes conventional condensers and cleaning systems mostly applying sponge rubber balls circulating through the heat exchange unit.

The problem to which Echols is directed is a very special way of intercepting the cleaning bodies from the outlet of the spent medium

by a suitable device and then returning them again into the fresh liquid medium supplied to and flowing through the heat exchanger for further circulation.

Echols goal is to eliminate the need for large screens for receiving the entire flow from the heat exchanger for the purpose of removing the tube cleaners there from (Col, 3 lines 38-40). This is done by removing the cleaners from the outlet flow at ambient pressure. The cleaners are then intercepted and channeled to recirculation means entrained in an injection flow by suction and circulated through condenser tubes under pressure. According to Echols, these cleaning bodies have a positive buoyancy at ambient pressure, and a neutral or negative buoyancy under increased pressure. Thus, the result of Echols is to have a positive buoyancy at atmospheric pressure, and a compressibility of the cleaning bodies which is selected so that the cleaning bodies can be compressed to achieve neutral or negative buoyancy.

The tube cleaners of Echols are made to have a density such that they approach neutral density under conditions expected to be encountered at the entry to condenser tubes. In one form, cleaning elements comprise closed cell material. An example is polyurethane foam. This material is used because when compressed, its density increases and buoyancy decreases. (Echols col. 4 lines 44-56).

Echols is drastically different from the secondary reference with which the Examiner has combined to make the rejection under 35 U.S.C. 103.

The Examiner states that Hargett teaches the use of cleaning pipe line systems for crude oil at temperatures above 120°C, and refers to Col. 1, lines 30-40 therein.

It is noted that following the portion of Hargett cited by the Examiner, Hargett continues to teach that "as the crude oil flows through the offshore pipeline, to its destination, a

cooling process naturally occurs. Paraffin, also known as asphaltines, would tend to drop out of the crude oil as the oil cools, usually in the neighborhood of below 140°F. As the paraffin builds up on the walls of the pipeline, because of cooling, it tends to form an insulation against the low temperature of the walls of the pipeline".

Hargett's teaching is drawn toward removal of the build up of paraffin in the pipelines. Thus, while the crude oil may be at a temperature of 250°F when it is first removed from the subterranean formation, no such temperature is present in connection with removal of the paraffins. In fact, no mention in Hargett is found to suggest the cleaning of tubes carrying a flowing medium at a temperature above 120°C. In further consideration of Hargett, it is noted that Hargett provides a "pig" which is disclosed as a steel body supported by bi-directional urethane disks which are separated by either steel or urethane spacers. The rear disks are separated by a magnetic circuit and encapsulated in urethane. The function of this circuit is to ensure detectability of the pig from the outside of the pipeline.

This disclosure is made in Col. 2, lines 29-31.

The bi-directional urethane disks are shown as 38 in the embodiment of Fig. 4 in Hargett, and the urethane spacers are shown at item 40. Based upon the foregoing, it is clear that: 1. Hargett teaches a complex structure (the pig) as compared to the cleaning bodies of the present invention, 2. the Hargett cleaning elements include plastic material which is not suitable for being used above temperatures of 120°C, and 3. substituting the structure of Hargett for that of Echols would destroy the function of Echols as it relates to the goal of controlling

buoyancy by using cleaning bodies which charge density. Clearly, the Hargett "pig" would not do this.

It is respectfully submitted that Hargett is totally useless for cleaning systems for heat exchangers containing media at temperatures above 120°C. It is respectfully submitted that a person of ordinary skill in the art attempting to solve problems in connection with tube heat exchangers such as that of the present invention would clearly not expect to find any useful solution whatsoever in a teaching such as Hargett.

Based upon the foregoing, it is respectfully submitted that the Examiner has not made a prima facie case for obviousness based upon Echols and Hargett, and in fact, that the claims of the present application are patentable over same.

In connection with the two part cleaning body configuration of the present invention, the Examiner has further relied upon U.S. Patent No. 4,891,115 to Shishkin. It is noted that Shishkin is similar to Hargett and only discloses a "pig" apparatus for removing deposits in pipelines. Such a structure is not even remotely related to the structure set forth in the claims of the present invention, and would not lead a person of ordinary skill in the art to make any combination whatsoever which would arrive at such subject matter.

The above arguments should be considered in connection with the claims set forth in the Amendment filed April 19, 2005.

An earnest and thorough effort has been made to place this application in condition for allowance, and it is respectfully submitted that all claims define patentably over the art of record. If, upon consideration of this response, the Examiner feels there are issues which can be resolved by telephone interview, the Examiner is respectfully invited to telephone the undersigned.

A clarification to the previously-authorized Deposit Account charges has been made above. If such charges have already been made in excess amount, please credit the overpayment to the same Deposit Account No. 02-0184.

Further, if any additional fee or fee deficiency is due, please charge same to Deposit Account 02-0184.

Respectfully submitted,

By _____

George A. Coury
BACHMAN & LAPOINTE, P.C.
Reg. No. 34,309
Attorney for the Applicant(s)

Telephone: (203)777-6628
Telefax: (203)865-0297
Email: docket@bachlap.com

Dated: April 27, 2005

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents" P.O. Box 1450, Alexandria, VA 22313-1450 on April 27, 2005.

Marian R. Capelli

Marian R. Capelli